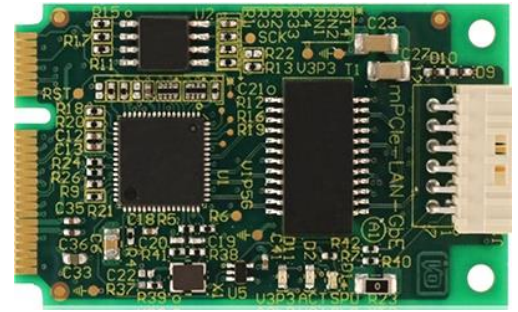**ACCES I/O PRODUCTS, INC.**

FEATURES

- PCI EXPRESS MINI CARD (mPCIe) TYPE F1, WITH LATCHING I/O CONNECTOR

- RUGGED DESIGN INCLUDES OVERVOLTAGE PROTECTION AND BUFFERING ON ALL SIGNALS

- ONBOARD MAGNETICS WITH BUILT IN ISOLATION VIA TRANSFORMER COUPLING

- INDUSTRIAL TEMPERATURE (-40 TO +85°C) AND RoHS STANDARD

- 10/100/1000 BASE-T INTERFACE ON mPCIe

- PCI EXPRESS v2.1 (2.5GT/s) INTERFACE

- OPTIONAL LOW-PPM XTAL TO SUPPORT IEEE 1488 PRECISION TIMING PROTOCOL

MODEL mPCIe-LAN-GbE

FUNCTIONAL DESCRIPTION

The mPCIe-LAN-GbE is a type F1 PCI Express Mini Card (mPCIe) optimized for use in mobile and rugged environments, with a latching connector and protection on all signals. The onboard magnetics feature robust built in isolation via transformer coupling. In addition, extended operating temperature and RoHS compliance are standard.

The card's high-speed PCI Express 2.1 controller and Intel's industry-leading I210 Ethernet chip provide an often-necessary 1000Base-T (gigabit) Ethernet port while low power-consumption, small form-factor and light weight make integration into existing designs a snap. Onboard LEDs provide diagnostic and status information about power, link/activity, and data rate.

Full 10/100/1000 BASE-T compatibility — with IEEE 1488 Precision Timing Protocol support when ordered with a low-PPM XTAL (optional) — makes the mPCIe-LAN-GbE perfect for use in any Ethernet environment, from servers to users; mobile, rack, or desktop.

An optional RJ45 positive-retention cable assembly is designed to be easily panel-mounted.

SPECIAL ORDER

Please contact ACCES with your precise requirement. Examples of special orders would be a low PPM crystal for IEEE 1488 Precision Timing Protocol, conformal coating, custom product labeling, and more. We will work with you to provide *exactly* what is required.
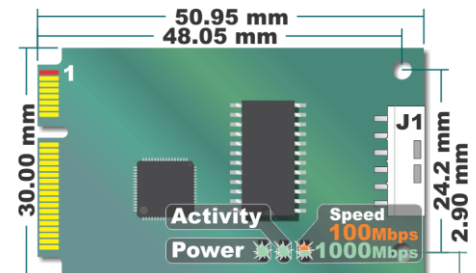
ACCESSORIES

Available accessories include a 9-inch panel-mount RJ45 cable and mounting hardware.
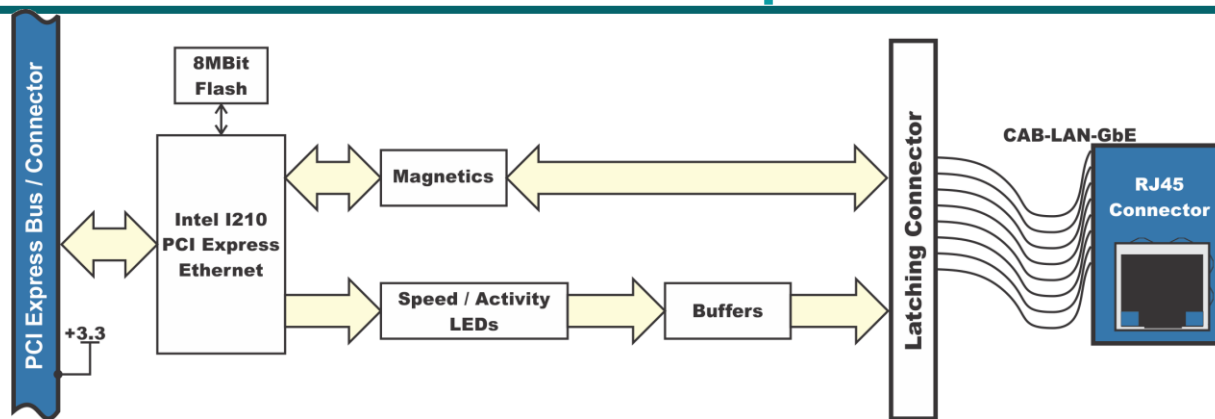
AVAILABLE ACCESSORIES INCLUDE:	
CAB-mPCIe-LAN	9-inch panel-mount RJ45 cable
mPCIe-HDW-KIT2	Mounting hardware for 2mm
mPCIe-HDW-KIT2.5	Mounting hardware for 2.5mm

SOFTWARE

Supported for use in most operating systems including Windows and Linux; embedded OS support includes DOS, XPe, WES7, WES8, IoT, VxWorks, and more.

BLOCK DIAGRAM

PC Interface

mPCIe (PCI Express Mini Card)	Type F1 "Full Length"

Ethernet I/O

Protocol	10/100/1000 Base T

ENVIRONMENTAL

Temperature	Operating	-40° to +85°C
	Storage	-40° to +85°C
Humidity		5% to 95%, non-condensing
Power required		+3.3VDC @ 176mA (1000Mbps)
		+3.3VDC @ 109mA (100Mbps)
		+3.3VDC @ 86mA (idle, no link)

PHYSICAL

mPCIe board characteristics		
Weight	Ounces	0.19
Size	Length	50.95mm (2.006")
	Width	30.00mm (1.181")
I/O connector	On-card	Amphenol FCI 98417-G61-12ULF
	On-cable	Amphenol FCI 10073599-012LF
	RJ45	Keystone 5379

On-card Pin Assignments

Function	Pin Name	Pin	Pin	Pin Name	Function
Ethernet Link/Activity	LINKACT LED	1	7	SPEED1000	1000Mbps speed ind
MDIx LANE 1 Positive	LAN1+	2	8	LAN0+	MDIx LANE 0 Positive
MDIx LANE 1 Negative	LAN1-	3	9	LAN0-	MDIx LANE 0 Negative
MDIx LANE 3 Positive	LAN3+	4	10	LAN2+	MDIx LANE 2 Positive
MDIx LANE 3 Negative	LAN3-	5	11	LAN2-	MDIx LANE 2 Negative
100Mbps speed ind	SPEED100	6	12	3.3V	+3.3V voltage rail

RJ45 Pin Assignments

Pin	Pin Name	Function
1	LAN0+	MDIx LANE 0 Positive
2	LAN0-	MDIx LANE 0 Negative
3	LAN1+	MDIx LANE 1 Positive
4	LAN2+	MDIx LANE 2 Positive
5	LAN2-	MDIx LANE 2 Negative
6	LAN1-	MDIx LANE 1 Negative
7	LAN3+	MDIx LANE 3 Positive
8	LAN3-	MDIx LANE 3 Negative

ORDERING GUIDE

mPCIe-LAN-GbE	Rugged 1-port 10/100/1000 Ethernet mPCIe Card
CAB-mPCIe-LAN	9-inch panel-mount RJ45 cable
mPCIe-HDW-KIT2	Mounting hardware for 2mm (mPCIe only)
mPCIe-HDW-KIT2.5	Mounting hardware for 2.5mm (mPCIe only)
SHIPS STANDARD WITH INDUSTRIAL OPERATING TEMPERATURE AND RoHS	
FACTORY OPTIONS:	
-PT	*Low PPM XTAL for IEEE 1488 Precision Timing Protocol*
-CC	*Conformal Coating*